

Green Racing: Taking the Fast Track to Cleaner Automotive Technologies

Circle track racing is one of the most popular sports in the U.S. with approximately 440,000 teams/drivers and 20+ million fans attending grassroots events annually.

The Challenge

Due to performance concerns, professional circle track racing series have been reluctant to allow racing teams to use today's cleaner and more efficient automotive technologies and fuels (e.g. fuel injection, advanced engine architectures, ethanol).

The Solution

A group of automotive researchers from Argonne National Laboratory and industry set out to prove that the misconceptions about performance are wrong. The research team has successfully shown that a modern fuel-injected race car engine running on E85 (an ethanol-based fuel) can outperform the race industry's standard engines that use carburetors and leaded racing fuel.

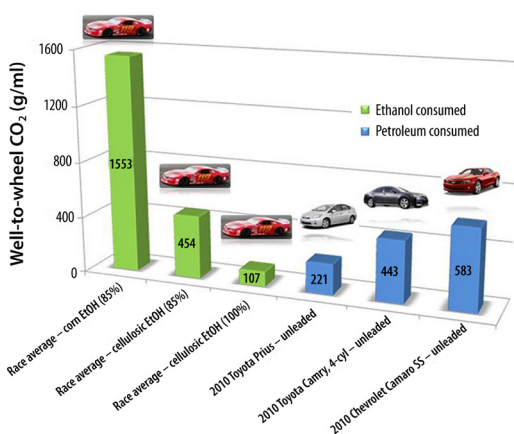
The Results

Using readily available corn-based ethanol in an E85 mixture (85 percent ethanol, 15 percent gasoline), the research team entered a project Camaro in the annual Oktoberfest race at the La Crosse Speedway in Wisconsin. In a 33-lap race (approximately 20 miles), the Camaro used less gasoline than a typical four-cylinder sedan traveling the same distance in everyday city-highway driving. In addition, if the fuel were sourced from cellulosic material, it would exhibit the same well-to-wheel greenhouse gas emission impact of that same four-cylinder sedan (see diagram at right).

The group is continuing its efforts at racetracks across the country. By integrating and proving green technologies can help race cars can run faster, cheaper and more efficiently, they hope the technologies will be embraced by more and more racing teams—and eventually by the 20 million racing fans across America.



Argonne researchers Forrest Jehlik and Danny Bocci (pictured on far right) are working with a team called Project GREEN to help prove the viability of green racing.



“The bottom line is that we have shown that modern fuel-injection technology, renewable E85 fuel and catalytic convertors provide better performance and increased efficiency while reducing emissions,” said Forrest Jehlik, mechanical engineer, Argonne National Laboratory. *“It’s a win-win for everyone, and we believe it is the future of racing and a step towards sustainability in the transportation fuels we use as a country.”*